



Streamside Vegetation

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It has been well documented that having trees and other vegetation around streams will help filter out sediment, nutrients, and many pollutants from entering the stream and how the overhead canopy helps cool the water allowing a more diverse assortment of aquatic plants and animals to inhabit the stream. Another function of the plants that exist around the stream that is not as well understood or appreciated is the value they have to the plant and animal life in the stream as it relates to the food web. This is more true in smaller headwater streams than it would be in a larger water body such as the Monocacy or Potomac River. Wider bodies of water are influenced less by the vegetation existing on the shore as they are by the water and sediments that is being carried in from upstream sources.



Photo of Middle Creek (Upper Catoctin Creek Watershed) near Wolfesville. Photo by Mike Kay.

When flowers, leaves, branches, trees, and other plant parts fall into a waterbody they are colonized by very small micro invertebrate and larger (visible to the naked eye) macro invertebrates that help decompose this material by shredding, chewing, and filtering the material. Once they do this they release the decomposed nutrients into the water in a form where they can be utilized by other aquatic creatures thereby enriching the water with nutrients. The aquatic life will utilize these nutrients for growth and energy to fuel the food web. It is estimated that nearly 70% of the detritus that falls into streams is utilized by the local stream life. In the spring of the year much of the input comes from pollen, flowers, branches, and seasonal plants such as skunk cabbage or trout lily. In the fall leaves, herbaceous plants, and branches make up most of the litter. The largest segment of detritus that falls into a stream comes from woody sources be they twigs, branches, or sections of the tree. All but the largest of woody vegetation is consumed in a matter of days under normal circumstances. If the stream becomes too acid then a lot of the micro and macro invertebrates will be lost or their functions impaired and nutrients are lost. When excess nitrogen or potassium is added via runoff the detritus is consumed very quickly so that the stream receives a flush of nutrients that can result in algae blooms, abundant aquatic plant growth all of which can reduce dissolved oxygen in the water and affect stream live. Studies have also demonstrated that detritus coming from native plants is more easily converted into available energy than nonnative plants. This makes sense when you consider that most of the aquatic life has evolved with native plants. When everything is in balance the stream has a large diversity of plant and animal life, clean, cool water with adequate nutrients to fuel but not upset the food web.